Tennessee TECH

ENVIRONMENTAL HEALTH AND SAFETY

# Bloodborne Pathogens Exposure Control Plan

**Environmental Health and Safety is available to assist adapting this model plan to individual sites.**

**Coordinator, Environmental Health and Safety:**
**Sarah DiFurio**
**sdifurio@tntech.edu**
**372-3587**

## Table of Contents


**I. IDENTIFICATION ..... 4**

**II. REVIEW AND UPDATE OF THE EXPOSURE CONTROL PLAN ..... 4**

**A. Scope and Application ..... 5**

**III. RESPONSIBILITIES ..... 5**

**A. Department of Environmental Health & Safety ..... 5**

**B. Directors, Deans and Department Chairs ..... 5**

**C. Principal Investigators, Supervisors, researchers, laboratory and clinical managers, and faculty ..... 6**

**D. Employees ..... 6**

**IV. EXPOSURE DETERMINATION ..... 7**

**V. COMPLIANCE METHODS ..... 8**

**A. Universal/Standard Precautions ..... 8**

**B. Engineering Controls ..... 9**

**VI. NEEDLESTICK AND SHARPS SAFETY ..... 11**

**A. Safe Sharps Evaluation ..... 11**

**B. Employee Evaluation ..... 12**

**VII. WORK PRACTICE AND ADMINISTRATIVE CONTROLS ..... 13**

**A. Personal Protective Equipment ..... 14**

**B. PPE Precautions ..... 15**

**C. Housekeeping ..... 16**

**D. Work Surface ..... 17**

**VIII. APPROPRIATE DISINFECTANTS ..... 17**

**IX. SPILLS……..17**

**X. REGULATED WASTE……18**

**XI. CONTAMINATED LAUNDRY……18**

**XII. LABELS AND SIGNS.....19**

**A. HIV and HBV Research Laboratories and Production Facilities……19**

**XIII. HEPATITIS B VACCINATION, POST-EXPOSURE EVALUATION AND FOLLOW-UP……....19**

**XIV. POST EXPOSURE EVALUATION AND FOLLOW UP.....20**

**A. Procedure for Evaluating an Exposure Incident……21**

**XV. INFORMATION AND TRAINING.....22**

**A. Site Specific Bloodborne Pathogens Training……22**

**B. General Training……22**

**C. Elements of the Bloodborne Training Program……22**

**XVI. RECORDKEEPING.....23**

**XVII. DEFINITIONS…… ……24**

Bloodborne Pathogens
Exposure Control Plan

## I. Identification

In accordance with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030, the following exposure control plan has been developed for

| | | |
|---|---|---|
| Dept, School, or Unit | Location: Campus, Bldg, Rm. # | Preparation Date |
| PI, Manager or Responsible Supervisor | Job Title or Position | |

### A. Introduction

In 1992, the Occupational Safety and Health Administration (OSHA) enacted the Bloodborne Pathogens Standard codified as 29 CFR 1910. 1030. The purpose of the standard is to protect workers from anticipated exposures to bloodborne pathogens including Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV).

The OSHA Bloodborne Pathogens Standard was modified in 2001 to include the Needlestick Safety and Prevention Act which includes new examples in the definition of engineering controls, requires exposure control plans reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens, requires employers to consider safer needle devices when they conduct their annual review of their exposure control plan and requires employers to solicit input from non-managerial employees responsible for *direct patient care* in the identification, evaluation and selection of engineering and work practice controls. It also requires the employer to document this input in the exposure control plan and requires employers to establish and maintain a log of percutaneous injuries from contaminated sharps.

The Exposure Control Plan (ECP) is designed to minimize occupational exposure by identifying potentially exposed employees, routinely employing Universal Precautions and instituting engineering and work practice controls.

## II. Review and Update of the Exposure Control Plan

This Exposure Control Plan will be reviewed and updated by the responsible supervisor, PI, or Dept Head at least annually, and when necessary to reflect new or modified tasks and procedures that affect occupational exposure, and to reflect new or revised employee positions that affect occupational exposure. The review and update of the plan will also: (1) Reflect changes in technology that eliminate or reduce exposure to bloodborne pathogens; and (2) Documents annually the consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

| Exposure Control Plan Annual Review | | | |
|---|---|---|---|
| **Name of Reviewer** | **Signature** | **Position** | **Review Date** |
| | | | |
| | | | |
| | | | |

### A. Scope and Application

This Exposure Control Plan applies to all employees at risk of occupational exposure to bloodborne pathogens. Workers at risk are identified based on their Job Classifications or the Tasks and Procedures associated with the work they perform. Therefore, it is important that an accurate Exposure Determination be conducted to identify all individuals covered by this plan.

## III. Responsibilities

### A. Department of Environmental Health and Safety

Environmental Health and Safety is responsible for the development of the TTU Bloodborne Pathogens Program and will:

- Develop and evaluate the written TTU Bloodborne Pathogens Program
- Develop and evaluate the Exposure Control Plan
- Develop and provide the TTU general initial and annual refresher Bloodborne Pathogens training
- Provide consultation, workplace assessments and other services as needed for TTU Departments or Supervisors

### B. Directors, Deans and Department Chairs

Departments whose employees may have occupational exposure to blood or OPIM are responsible for the overall implementation of the Bloodborne Pathogens Program for their units.

- Ensure all PI's, faculty members and staff are aware of and follow the requirements of the ECP
- Assist PI's, faculty members and staff with allocation of appropriate funding for administration of the Hepatitis B Vaccine and Titer Check and other requirements of the ECP
- Ensure the continuity of recordkeeping, primarily when supervisors leave or are reassigned.

### C. Principal Investigators, Supervisors, researchers, laboratory and clinical managers, and faculty

The Responsible Supervisor is ultimately responsible for ensuring that the unit-specific Exposure Control Plan (ECP) is completed and is understood and followed by the employees under their charge. While the supervisor is *responsible* for implementing each of the elements described within the written ECP, it is permissible to delegate some *tasks* to other capable employees, provided the roles are clearly documented and understood

- Identify all employees (including full, part-time and temporary) with a reasonably anticipated exposure to blood or OPIM
- Complete and implement the Unit specific Exposure Control Plan
- Ensure effected employees are provided with the Hepatitis B Vaccine within 10 days of job assignment
- Ensure that employees, who initially decline the Hepatitis B vaccine, sign the Hepatitis B Declination statement as provided on the Hepatitis B Vaccine Offer form.
- Provide unit specific Bloodborne Pathogens training upon assignment to duties with occupational exposure
- Ensure employees participate in Bloodborne Pathogens training, either on-line or classroom, initially and annually thereafter
- Maintain the training records and Hepatitis B vaccine forms, and other associated records as directed in this document
- Conduct ongoing worksite evaluations and annual review of the ECP to ensure the written ECP is effectively implemented

### D. Employees

All employees performing work with occupational exposure to blood or other potentially infectious material must accept a responsibility for operating in a safe manner. Employees also have a responsibility to inform their supervisors of working conditions, accidents and work practices they believe hazardous to their health or the health of others. Employees are responsible for the following:

- Participating in both initial and annual Bloodborne Pathogens training
- Completing the Hepatitis B Vaccine Offer form
- When selecting to receive the vaccine, the employee is responsible for going to the TTU Health Services Office to receive the Vaccine. Employees are not responsible for the cost of the vaccine, in any manner.
- In the event of an exposure incident, seek medical evaluation immediately (within 1-2 hours)

## IV. Exposure Determination

OSHA requires employers to determine (perform an exposure determination concerning) which employees may incur occupational exposure to blood or other potentially infectious materials (OPIM). The exposure determination is made without regard to the use of personal protective equipment (e.g., employees are considered to have potential exposure even if they wear PPE). This exposure determination contains the following:

Please indicate all the materials to which employees may have reasonably anticipated contact.

| **Laboratory or Clinical Setting** | |
|---|---|
| **Exposure Determination by Potentially Infectious Materials** | |
| This laboratory or clinic has the following Human/Primate Clinical Specimens: (please specify) | |
| **Human Clinical Specimens** | **Research Materials Derived from Human/Primate Blood or OPIM** |
| __ Human Blood | __Human primary or permanent cells, cell lines |
| __Human Blood Products (e.g. albumin, Factor 8) | __Other Research materials derived from Human or Primate Blood or Other specimens: |
| __Other body fluids (e.g. amniotic fluid, semen, vaginal secretions, peritoneal fluid, pericardial fluid, cerebrospinal fluid, pleural fluid, synovial fluid, saliva in dental procedures, any body fluids visibly contaminated with blood, etc.) | __Animal tissue/cells infected with HIV or HBV, HCV, etc. (i.e. see agents listed below) |
| __Human tissue or organs, teeth | __Non-human primate cell lines, tissues, body fluids |
| __Other: | __Other: |

| **This laboratory or clinic has the following BBP Exposure Agents:** (please specify) |
|---|
| __Bacteria: (e.g. Brucella abortis, Corynebacterium diptheriae, Neisseria Gonorrhoeae) |
| __Viruses: (e.g. HIV, HBV, HCV, Cytomegalovirus, Epstein Barr Virus, Hepatitis D Virus, West Nile Virus,) |
| __Animal Specimens infected with Human Bloodborne Pathogens: (Herpes B Virus, Fancisella tularensis, coxiella burnetti, Leptospira, interrogans, Rabies virus) |
| __Other Parasites/infectious agents: |

*Other than the laboratory or clinical setting*, the following is a list of employees, their job classifications and the associated tasks in which occupational exposure to bloodborne pathogens may occur.

| **Job Classification** | **Task/Procedure that may have occupational exposure** |
|---|---|
| __ Child Care Workers | __Providing first aid; Clean up of materials that may contain blood or OPIM |
| __Lifeguards | __Providing first aid; Clean up of materials that may contain blood or OPIM |
| __University Police | __Providing first aid; Clean up of materials that may contain blood or OPIM |
| __Athletics | __ Providing first aid; Clean up of materials that may contain blood or OPIM fluids |
| __Other: | __Other: |

List the tasks, procedures and activities or groups of closely related tasks and procedures, which are associated with occupational exposure to blood or other potentially infectious materials. Please be sure to include all activities both primary and ancillary to your project in which occupational exposure may occur. In those activities or tasks, which only some employees may be assigned, please specify which employees (by name, title, or job classification) will be involved in each activity.

| **Exposure Determination** |
|---|
| Specific tasks that may cause exposure to BBP |
| |
| |
| |
| |
| |

## V. Compliance Methods

### A. Universal/Standard Precautions

Universal or what is now often referred to as Standard Precautions is a simple approach to infection control and will be used with all blood or other potentially infectious materials (OPIM). Universal Precautions were developed by the Centers for Disease Control to help

prevent the transmission of bloodborne diseases in the work place. Under Standard Precautions, all human blood, human body fluids, secretions and excretions, and other potentially infectious materials (OPIM) are considered infectious for HIV, HBV, HCV and other bloodborne diseases. Therefore, all human blood and OPIM are treated as though they are infectious and precautions are taken accordingly.

**OPIM includes the following:** body fluids-semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids

Any unfixed tissue or organ (other than intact skin) from a human (living or dead)

Blood products and blood components, albumin, factors 8 and 9, immune globulin

Human cells or tissue cultures, and HIV or HBV containing culture medium or other solutions,

Blood, organs and other tissues from experimental animals infected with Bloodborne pathogens or OPIM

Human cells, cell lines, cell strains, tissue cultures, cell media,

Non-human primate cells, cell lines, cell strains, tissue cultures, cell media

### B. Engineering Controls

Engineering controls are physical or mechanical means of isolating or removing bloodborne hazards from the work area. Engineering and work practice controls are used to eliminate or minimize exposure to employees. Where occupational exposure remains after institution of these controls, personal protective equipment will be used.

**The following engineering controls are used:**

- **Hand washing facilities** with appropriate hand cleaners and disposable towels are readily available in the work area, such as the laboratory, procedure room, or patient care area. Where it is not feasible to have hand washing facilities readily accessible, disinfectant hand cleaners (containing at least 62% alcohol) will be provided.
- **Sharps containers** are available where sharps are used. Appropriate containers are puncture resistant, labeled with a biohazard label or color coded, and leak proof on the sides and bottom. Sharps containers are located as close to the point of use as possible, preferably at eye level. Sharps containers may not be allowed to overfill.
  - **Re-usable Sharps Containers** will **not** be opened, emptied, or cleaned manually; or in any other manner that would expose employees to the risk of percutaneous injury.
  - A guide for the proper selection and use of sharps containers can be found at the following website: http://www.cdc.gov/niosh/pdfs/97-111.pdf

- **Sharps safety devices** will be used to the extent feasible, appropriate, commercially available and effective to reduce employee exposure to blood or OPIM for withdrawing body fluids, accessing a vein or artery or administering medications or other fluids. Sharps with Engineered Sharps Injury Protections (SESIPs) encompasses a broad array of devices including: syringes with guards or sliding sheaths that shield the attached needle after use, needles that retract into the syringe after use, needless IV medication connection systems, and plastic capillary tubes. A list of safety devices with manufactures and specific products can be found at the following web site: http://tdict.org

- **Biological Safety Cabinets (Class II BSC)**, in appropriate situations (i.e. labs) provides worker protection during aerosol generating procedures with human blood and OPIM including human cells, tissue cultures, and blood products and blood components. Class II BSC, while providing laminar airflow to protect research material, are designed with inward flow to protect personnel, and filtered exhaust air for environmental protection as well.
- **Infectious Waste** is discarded into biohazard containers, lined with a red plastic bag. If the waste could puncture the bags, it must first be placed in a sharps container.
- **Mechanical Pipettes** must be used; mouth pipetting is prohibited.
- **Containers** for blood or OPIM: Specimens of blood or other potentially infectious material will be placed in a container that **prevents leakage** during collection, handling, processing, storage, transport and shipping.
    - The container for storage, transport, or shipping shall be **labeled** with the Biohazard warning symbol in fluorescent orange or orange-red, and closed prior to being stored, transported, or shipped.
    - If outside contamination of the primary container may have occurred, the primary container will be placed within a **second container** that prevents leakage during handling, processing, storage, transport, or shipping and is labeled with the Biohazard warning symbol in fluorescent orange or orange-red.
    - If the specimen could puncture the primary container, the primary container will be placed within a **second container that is puncture-resistant in addition to the above characteristics**.
- **Autoclaves** are available in some labs, clinics or units for decontamination. Proper use of equipment is essential to ensure sterilization.
- **Transportation:** Transportation refers to the packaging and shipping of materials by air, land or sea. Transfer refers to the process of exchanging these materials between facilities. When transporting blood or OPIM off site, all federal, state and local regulations for packaging transportation must followed. Please contact EHS at 372-3587 for further information.
- **Contaminated Equipment** will be decontaminated prior to servicing or shipping. Equipment that cannot be decontaminated will be labeled with a biohazard label. When using centrifuges, balanced tubes will be used and procedures immediately implemented to

clean up the equipment if an accidental spill occurs.

- **Plastic or Mylar Coated Capillary tubes** will be used instead of glass capillary tubes.

| **Other Engineering controls employed by this unit**: (please specify) |
|---|
| |
| |

### VI. Needlestick and Sharps Safety

The supervisor or PI who has **employees with direct patient contact** must consider and, where appropriate, use effective engineering controls, including safer sharps devices or needleless systems **for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids,** in order to reduce the risk of injury from needlesticks and from other sharp medical instruments. This includes:

- Establish a program for evaluating safer sharps devices designed to eliminate or minimize occupational exposure. This program should include an identification process, an evaluation process and a selection process.
- Review the sharps that are being used on an annual basis.

Note: An appropriate safer sharps device includes only devices whose use, based on reasonable judgment in individual cases, will not jeopardize patient or employee safety or be medically contraindicated.

**A.** The PI or supervisor must identify all sharp devices that have available products with safer engineering features and determine which products are to be evaluated.

| **Sharps Product Evaluated** | **Safety Device Available/Acceptable** | **Date Evaluated** |
|---|---|---|
| __ Syringe | | |
| __ Scalpels | | |
| __ IV access device | | |
| __ IV medication connectors | | |
| __ Vacuum tube collection systems | | |
| __ Dental syringes | | |
| __ Lancets | | |
| __ Capillary tubes | | |
| __ Other device (specify) | | |

In departments that have **direct patient care**, the PI or responsible supervisor alone cannot evaluate and select the safer sharps devices; supervisors must choose non-managerial employees who perform tasks using the sharps also to be involved in this process.

**B.** The following employees will participate in the evaluation process:

| Sharps Safety Device Selection | |
|---|---|
| **Name** | **Job Title/Job Classification** |
| | |
| | |
| | |

- The PI or supervisor should encourage each evaluator to comment on evaluation forms. The Centers for Disease Control and Prevention (CDC) have sample screening and evaluation forms available: http://www.cdc.gov/OralHealth/infectioncontrol/forms.htm
- The PI or supervisor will be responsible for the completed sharps evaluation forms.
- **Note:** If there is no safer option for a particular sharps device used where there is exposure to blood or OPIM, you are not required to use something other than the device that is normally used. This information must be documented. During your annual review of devices, you must inquire about new or prospective safer options.

Once the evaluation process is complete and the safer sharp device has been chosen, the PI or supervisor must implement use of the safer sharps devices as soon as possible.

Note: The selection and implementation process **cannot** be postponed in order to use up supplies of non-safer sharps. Additionally, when the safer sharps are in place, supplies of the non-safer sharps may not be used.

**C.** The review and update of the Exposure Control Plan must reflect innovations in procedure and technological developments that eliminate or reduce exposure to bloodborne pathogens. This includes, but is not limited to, newly available sharps devices designed to reduce the risk of percutaneous exposure to bloodborne pathogens.

i. The following web sites provide additional information on the Needlestick Safety Act, Needlestick injury prevention and available Sharps Safety Devices.

- How to prevent needlestick injuries: http://www.osha.gov/Publications/osha3161.pdf
- For a list of safety-engineered sharp devices and other products designed to prevent occupational exposures to bloodborne pathogens*:* http://www.healthsystem.virginia.edu/pub/epinet/new/safetydevice.html

**D.** The PI or supervisor is responsible for ensuring engineering controls are maintained or replaced as necessary to ensure their effectiveness

- Check that there is an adequate stock of supplies (e.g. sharps containers, red bags, gloves)
- Check the fill level of sharps containers and replace filled containers with new ones
- Check the fill level of infectious waste containers and appropriately close or seal containers when no more than ¾ full.
- Ensure controls are adequate for existing and new work tasks and infectious materials.
- Ensure controls are readily accessible to affected employees.
- Implement alternative controls if necessary (e.g. provide antiseptic toweletts or waterless antiseptic agents if no hand washing facility is available, provide secondary container if outside of primary is soiled or for transport).

## VII. Work Practice and Administrative Controls

Work Practice controls are behavioral means of reducing an individual's exposure potential by following established rules, procedures, or guidelines associated with a particular work task. Safe work practices used in conjunction with engineering controls and PPE may substantially decrease an individual's risk of incurring an exposure to blood or OPIM.

**All employees must adhere to the following work practice controls**:

- Observe **Universal/Standard Precautions** at all times.
- **Washing Hands with soap and water** for at least fifteen (15) seconds is required immediately after any exposure, and as soon as possible after removal of gloves or other personal protective equipment. If employees incur exposure to skin, those areas will be washed with soap and water. Exposures to eyes or mucous membranes require flushing with water.
- **Antiseptic toweletts or other waterless hand cleaners/disinfectants** may be used if hand washing facilities are not feasible for a particular situation. If these temporary alternatives are used, wash hands with soap and running water as soon as feasible.
- **Needles and Sharps will not be bent, recapped,** removed, sheared or purposely broken. Needles and other sharps will be discarded into approved sharps containers. Recapping of any sharp is not permitted without written approval from EHS.
- **Personal Protective Equipment will be removed** immediately upon leaving the work area. Lab coats, used as PPE, must not be worn outside the work area. Items visibly contaminated or likely to be contaminated with blood, OPIM, or infectious agents are to be discarded in infectious waste containers. Items that meet the definition of Regulated waste (see Section 3, Waste Disposal) are to be disposed in infectious waste containers.
- **Eating, Drinking, applying cosmetics, and handling contact lenses are prohibited** in work

areas where there is a possibility of occupational exposure. Food and beverages will not be stored in refrigerators, freezers, counters or bench tops where blood or OPIM are present.

- **Mouth Pipetting or suctioning is prohibited**.
- All procedures involving blood or OPIM will be conducted in a manner **minimizing spraying, splashing or generation of droplets.**
- **Post BIOHAZARD signs or labels** at entrances to work areas, refrigerators, freezers, fume hoods, biosafety cabinets, etc. where blood or OPIM is used or stored
- **Needleless Systems or Sharps with engineered sharps injury protectors** must be considered and used to the extent feasible for the collection of bodily fluids or withdrawal of body fluids, accessing a vein or artery, or administering medications or other fluids.

| **Other Work Practice Controls employed by this unit:** (Please list if applicable) |
| --- |
| |

### A. Personal Protective Equipment

Personal Protective Equipment (PPE) is specialized clothing or equipment worn by a worker for protection against a hazard. When there is a risk of occupational exposure to Bloodborne Pathogens, PPE is an effective means of protection when the proper type is used and its integrity maintained. PPE such as, but not limited to gloves, gowns, aprons, surgical caps, foot covers, lab coats, face shields, masks, and respirators will be provided to employees as appropriate.

All personal protective equipment (PPE) used will be provided, at no cost to the employees.

**PPE is chosen based on the anticipated exposure. The PPE will be considered appropriate only if it does not permit blood or OPIM to pass through or reach the employee's clothing, skin, eyes, mouth, or mucous membranes under normal conditions of use and for the duration of time the PPE will be used.**

At a minimum, individuals working with BBP will wear a lab coat & gloves while handling or processing blood or OPIM. Tasks or procedures that may produce aerosols, if not performed in a biosafety cabinet, require the use of appropriate face protection: a surgical mask with safety glasses or glasses with either side shields, or chin length face shield.

Employees exhibiting dermatitis, allergy or sensitivity to normally provided gloves will be provided with hypoallergenic, powder-free gloves or gloves of an alternative, equally protective material.

The Principal Investigator, or supervisor is responsible for ensuring that PPE in appropriate

sizes is readily accessible to all employees and will ensure there is an adequate stock of supplies and PPE.

The supervisor or PI must ensure that all employees are trained in the proper selection, use, limitations, donning and doffing, cleaning or disposal of PPE that is appropriate for the tasks they will perform.

**B. All employees must adhere to the following precautions when wearing PPE**:

- **Contaminated PPE will be removed as soon as possible**.
- **All PPE must be removed prior to leaving the work area, whether contaminated or not**. This is especially important for gloves, since they are generally assumed to be contaminated. When disposable gloves are removed, they must be discarded in Biohazard containers.
- **Gloves are worn when employees may have hand contact with blood, OPIM**, mucous membranes or non-intact skin, or contaminated items or surfaces.
- **Gloves must be replaced as soon as possible if they are torn, punctured**, or when their ability to function as a barrier is compromised.
- **Gloves must not be worn to transport blood or OPIM outside the work area**, as a means to prevent skin contact. Instead, the primary container is placed in a clean secondary container for transport, making gloves unnecessary.
- **Disposable gloves may only be used once**. Gloves will be discarded when removed. They are not to be washed or decontaminated for re-use.
- **Utility gloves may be decontaminated for re-use** if the integrity of the glove is not compromised. However, they must be discarded if they are torn or punctured.
- **Lab coats and other *washable* PPE** must be laundered either by a laundry service or on-site, by machine using regular settings and detergent and bleach. These items and other contaminated garments must not be sent home with the employee for cleaning.
- **Street clothes are not considered PPE**. *Scrubs* are usually worn in a manner similar to street clothes; therefore, street clothes and scrubs should be covered by appropriate gowns, aprons or lab coats when splashes to the skin or clothes are reasonably anticipated.

| The following list indicates the required PPE for tasks and procedures in which occupational exposure may occur. | | |
|---|---|---|
| **PPE** | **Task/Procedure** | **Location of PPE** |
| **Gloves**<br>__ Latex<br>__ Nitrile<br>__ Other (specify) _____ | (include all tasks when handling Blood or OPIM) | |
| **Clothing**<br>__ Cloth Lab Coats<br>__ Disposable Lab Coats<br>__ Gowns, aprons<br>__ Foot, head covers | | |
| **Eye and Face Protection**<br>__ Face shields<br>__ Goggles and Masks<br>__ Safety Glasses and Masks | (Include all procedures conducted that generate sprays, splashes, droplets, aerosols when conducted without engineering controls) | |
| **First Aid**<br>__ Resuscitation mask | | |
| **Other PPE** (specify) _____ | | |

### C. Housekeeping

Proper and routine cleaning and decontamination of work areas is an integral part of preventing environmental transmission of bloodborne pathogens. The Principal Investigator or supervisor will ensure work areas will be maintained in a clean and sanitary condition. At a minimum, work surfaces and equipment that come in contact with Blood or OPIM will be cleaned and disinfected at the completion of procedures and immediately, or as soon as possible after a spill.

All employees must adhere to the following practices of housekeeping and infection control:

- **Protective coverings** such as imperviously backed absorbent paper, plastic wrap or aluminum foil used to cover equipment and environmental surfaces will be **removed and replaced as soon as feasible after contamination**.
- **Inspect regularly all bins, pails, cans and similar receptacles intended for reuse** that may

become contaminated. Receptacles will be cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

- **Broken glassware that may be contaminated must never be picked up by hand**. Mechanical means such as forceps, tongs, or dustpan and broom must be used. Tools used in cleanup must be properly disinfected or discarded. The broken glass must be placed in a sharps container.

### D. Work Surface

Work surfaces and equipment will be cleaned and decontaminated at the completion of procedures, as soon as possible after contact with blood or OPIM, and at the end of the work shift if they may have been contaminated during the shift.

## VIII. Appropriate Disinfectant

Cleaning of contaminated work surfaces after completion of procedures is required to ensure that employees are not unwittingly exposed to blood or OPIM remaining on a surface. Appropriate disinfectants include a diluted bleach solution and **EPA registered tuberculocides (List B)**: http://www.epa.gov/sites/production/files/2015-09/documents/list_b_tuberculocide.pdf

Under this standard, OSHA has interpreted that, to decontaminate contaminated work surfaces, either an EPA-registered hospital tuberculocidal disinfectant or an EPA-registered hospital disinfectant labeled as **effective against human immunodeficiency virus (HIV) and hepatitis B virus (HBV) is appropriate (List D)**: http://www.epa.gov/sites/production/files/2015-09/documents/list_d_hepatitisbhiv.pdf

Hospital disinfectants with such HIV and HBV claims can be used, provided surfaces are not contaminated with agents or concentration of agents for which higher level (i.e., intermediate-level) disinfection is recommended. In addition, as with all disinfectants, effectiveness is governed by strict adherence to the label instructions for intended use of the product.

NOTE: The EPA lists contain the primary registrants' products only. The same formulation is frequently repackaged and renamed and distributed by other companies. These renamed products will not appear on the list, but their EPA Registration number must appear on the label.

## IX. Spills

Spills must be cleaned up immediately. Use personal protective equipment (PPE) appropriate to prevent BBP or OPIM from coming in contact with your hands, mucous membranes, non-intact skin or penetrating protective clothing. For most spills, a lab coat or disposable gown and gloves should be sufficient.

Clean up and absorb liquid material with paper towels or other absorbent materials to prevent spill from spreading. Use tongs or similar device to pick up broken glassware or sharps and

dispose in sharps container. Discard paper towels used to soak up spill in biohazard container, and any broken glass in a sharps container. Most organic material must be cleaned before disinfecting the area.

Disinfect spill area by first laying absorbent material over spill area, and then gently adding a 10% bleach solution or other "appropriate disinfectant" and allowing it soak for the required contact time (15-20 min. for bleach or see manufactures recommended contact time). Wash your Hands. After contact time has elapsed, wipe area with water or cleaning solution if indicated. Wash your hands. If you have a question about a biohazard spill, call EHS at 372-3587. If this is an emergency, call TTU Police at 372-3234 or 911.

The following table is a schedule of cleaning and decontamination based upon the location within the facility, type of surface to be cleaned (e.g. hard-surface versus carpeting) and type of soil present (e.g. gross contamination versus minor spattering) and tasks and procedures being performed (e.g. lab analyses versus blood collection).

### X. Regulated Waste Disposal

Regulated waste is defined by OSHA as liquid or semi-liquid blood or OPIM; contaminated items that would release blood or OPIM in a liquid or semi-liquid state if compressed; items that are caked with dried blood or OPIM capable of releasing these materials during handling; contaminated sharps; all needles and syringes regardless of their use; and pathological and microbiological wastes. All employees will adhere to the following when disposing Regulated Waste:

- Immediately after use**, sharps will be disposed of in closable, puncture resistant containers** that are leak proof on sides and bottom, and labeled or color-coded.
- **Sharps containers will be replaced routinely** and not allowed to overfill.
- **All regulated waste must be segregated, packaged and discarded in accordance with the Regulated Medical Waste Training**. It is the responsibility of the department, or laboratory generating regulated waste to comply with these guidelines, and provide the appropriate packaging material (i.e. sharps containers and orange/red Biohazard bags). Contact Environmental Health and Safety for this training.

### XI. Contaminated Laundry

The department, PI or supervisor is responsible for providing laundry services for contaminated lab coats, other contaminated re-usable garments and any other contaminated non-disposable laundry items. Laundry service is provided by (name of vendor) _____.

- Laundry contaminated with blood or OPIM will be handled as little as possible. Such laundry will be placed in appropriately marked bags (red bags) at the location where it is used.
- All employees who handle contaminated laundry will use appropriate personal protective equipment (gloves).

- Disposable articles may be used when feasible to reduce the generation of contaminated laundry.
- Laundry items should not be rinsed prior to being placed in laundry bags.
- Should employee owned clothing be contaminated, laundry services will also be provided. Home laundering of personal protective equipment or contaminated clothing is not permitted.

## XII. Labels and Signs

The PI or supervisor is responsible for ensuring labels and signs are available and posted as necessary to ensure adequate information is provided to workers and visitors entering the work area.

- Labels shall be affixed to containers of regulated waste, sharps containers, refrigerators, freezers, or other containers used to store, transport, or ship blood or OPIM.
- Red bags or containers may be substituted for labels as appropriate.
- Contaminated equipment will be labeled indicating contaminated surfaces and areas.
- The required labels will include the International Biohazard Symbol and BIOHAZARD written under the symbol.


- The labels will be fluorescent orange or orange-red with the letters and symbols in a contrasting color (Black).
- Labels will be affixed as close as feasible to the container, in a way that prevents their loss or unintentional removal.

### A. HIV and HBV Research Laboratories and Production Facilities

TTU does not have HIV or HBV research laboratories or production facilities that are engaged in the culture, production, concentration, experimentation, and manipulation of HIV and HBV as defined by this standard at this time. The ECP will be modified to meet these requirements if the research status changes.

## XIII. Hepatitis B Vaccination, Post-Exposure Evaluation and Follow-Up

Campus Health Services will provide training to employees on hepatitis B vaccinations, addressing safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost after initial employee training and within 10 days of initial assignment to all employees identified in the exposure determination section of this plan. Vaccination is encouraged unless: 1) documentation exists that the employee has previously received the series; 2) antibody testing reveals that the employee is immune; or 3) medical evaluation shows that vaccination is contraindicated.

However, if an employee declines the vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept at Campus Health Services.

Vaccination will be provided by Campus Health Services, is located in the ground floor of the Whitson-Hester School of Nursing building on the corner of 7th Street and Mahler Ave, (931) 372-3320.

Following the medical evaluation, a copy of the health care professional's written opinion will be obtained and provided to the employee within 15 days of the completion of the evaluation. It will be limited to whether the employee requires the hepatitis vaccine and whether the vaccine was administered.

**Complete the Hepatitis B offer/declination form and turn it into Campus Health Services. Vaccines are provided on an appointment basis. Call 372-3320 for an appointment. Regardless of your decision to accept or decline the vaccine, the employee is responsible for turning the Hepatitis B offer/declination form into Campus Health Services within 10 working days of assignment to a job with potential exposure.**

## XIV. Post Exposure Evaluation and Follow Up

Should an exposure incident occur, seek treatment at Cookeville Regional Medical Center Emergency Room (931) 528-2541 or Satellite Med Urgent Care and Family Practice (931) 528-7312. Following treatment, contact CorVel (as per Workers Compensation requirements). If exposure is not life-threatening, contact CorVel first then seek treatment as recommended.

An immediately available confidential medical evaluation and follow-up will be conducted by a medical professional. Following initial first aid (clean the wound, flush eyes or other mucous membrane, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider.

- If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

**A. Procedures for evaluating the circumstances surrounding the exposure incident**

Within three (3) business days of an exposure incident, contact Environmental Health and Safety (931) 372-3227.

Environmental Health and Safety will review the circumstances of all exposure incidents to determine:

- engineering controls in use at the time
- work practices followed
- a description of the device being used (including type and brand)
- protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
- location of the incident (O.R., E.R., patient room, etc.)
- procedure being performed when the incident occurred
- employee's training

Environmental Health and Safety will record all percutaneous injuries from contaminated sharps in a Sharps Injury Log.

**For Bloodborne Pathogen Exposure Contact**

**Satellite Med Urgent Care and Family Practice**
1120 Sams Street
Cookeville, TN
Phone: (931) 528-7312

**Cookeville Regional Medical Center**
1 Medical Center Boulevard
Cookeville, TN
Phone: (931) 528-2541

Contact CorVel as per the Workers Compensation requirements.

## XV. Information and Training

The Principal Investigator, or supervisor is responsible for ensuring that all employees with occupational exposure receive Bloodborne Pathogens training **at the time of initial assignment to tasks where exposure may take place,** and annually thereafter.

Bloodborne Pathogens training has of two components:

- Site Specific training provided by the supervisor or PI.
- TTU specific training provided by EHS. This training can be completed online or in a classroom.

### A. Site Specific Bloodborne Pathogens Training

The PI or supervisor is responsible for providing training in specific tasks and procedures relating to the employees occupational exposure to bloodborne pathogens. This training must include:

- An explanation of the Site Specific Exposure Control Plan, the employee must be provided with adequate time to read it, ask questions and acknowledge comprehension.
- The specific use and limitation of appropriate PPE, its location, accessibility.
- An explanation of the engineering controls and work practice controls used in the work area to eliminate or reduce the risk of exposure to bloodborne pathogens.
- Instruction in the procedures and contacts in case of a spill or emergency involving blood or OPIM.
- An explanation of the site specific procedures for provision of Hepatitis B Vaccine and post exposure evaluation and follow-up.

If changes occur in tasks or procedures that may affect the employees' exposure, the PI or supervisor is responsible for providing timely training in those areas.

The training records must be maintained by the dept, PI, or supervisor for 3 years.

### B. General Training

#### i. TTU Bloodborne Pathogens Training Classes

The course is required for all university employees who may have occupational exposure to human blood, body fluids, tissues or other potentially infectious materials (OPIM) including human cell lines. The course, in conjunction with the site-specific training given by the supervisor, meets the OSHA training requirements.

The TTU Bloodborne Pathogens Training is available in an on-line format.

**On-Line Training:** EHS uses an online training program Roger's Learning System (RLS) to assist employees meet the Bloodborne Pathogens training requirements. Upon successful

completion of the course, the employee will be able to print a certificate, a copy of which must be given to the supervisor or PI. Questions and comments regarding the on-line training may be directed to the EHS Coordinator at sdifurio@tntech.edu or (931) 372-3587. The link to the training is available at https://www.tntech.edu/planning-and-finance/safety/training.

### C. The Bloodborne Pathogens training program consists of the following elements:

- Availability of the Bloodborne Pathogens Standard and explanation of its contents.
- A general explanation of the epidemiology and symptoms of bloodborne diseases.
- An explanation of the modes of transmission of bloodborne pathogens.
- An explanation of this individualized Exposure Control Plan including location and availability of copies.
- Appropriate methods for recognizing tasks and other activities that may involve exposure to blood or OPIM.
- An explanation of the use and limitations of exposure controls including engineering controls including sharps safety devices, work practices, and personal protective equipment
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- An explanation of the basis for the selection of personal protective equipment
- Information on the Hepatitis B vaccine including its efficacy, safety, method of administration, benefits and how to receive the vaccine at no cost to the employee
- Actions to take and persons to contact in case of a spill or other emergency involving human blood or OPIM
- The procedures to follow if an exposure incident occurs, including procedures for reporting and the medical follow-up that will be made available
- Information of the post exposure evaluation and follow-up that will be provided following an exposure incident
- Explanation of the signs, labels, and color-coding

## XVI. Recordkeeping

Accurate recordkeeping is essential for compliance and is the responsibility of the PI or supervisor. In addition, The Department must develop a plan to ensure the continuity of all recordkeeping when a supervisor leaves or is reassigned.

- **Medical records** will be established and maintained for each employee who has an occupational exposure incident. These records will be maintained by TTU Human Resources. These records are maintained for at least the duration of the individual's employment plus 30 years.
- **The sharps injury log** is maintained by EHS for the recording of percutaneous injuries from contaminated sharps. The information in the sharps injury log is recorded and maintained in such manner to protect the confidentiality of the injured employee and is kept for a minimum of 5 years. The sharps injury log includes the following information:

- The type and brand of device involved in the incident,
- The department or work area where the exposure incident occurred, and
- An explanation of how the incident occurred.

- **Training records** must be retained for 3 years. These records will be established at the time of training and maintained by the Principal Investigator or responsible supervisor. The **Training Record Form** is used to document when each employee is trained as well as the content of the training. These are important compliance records and must be maintained by the supervisor or designee for the duration of employment of each individual receiving the training.

    - The Department, PI or supervisor is responsible for maintaining all training records, initial and annual, for their employees. The Training Record form is provided in Appendix D as a recordkeeping tool.
    - EHS also maintains training files for on-line and class room training.
- **Hepatitis B Vaccine Offer Form** This form is not medical record and will be provided and maintained by the PI or responsible supervisor, for the duration of the employee's employment with the unit plus 3 years. All employees identified as having an occupational exposure to bloodborne pathogens must complete this form. These are important compliance records and must be maintained.

## XVII. Definitions

For the purpose of this plan, the following definitions will apply:

**Blood** means human blood, human blood components, and products made from human blood. The term "human blood components" includes plasma, platelets, and serosanguinous fluids (e.g. exudates from wounds). Also included are medications derived from human blood, such as immune globulins, albumin, and factors 8 and 9.

**Bloodborne Pathogens** means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) human immunodeficiency virus (HIV) and hepatitis C virus (HCV). While HBV and HIV are specifically identified in the standard, the term includes any pathogenic microorganism that is present in human blood or OPIM and can infect and cause disease in persons who are exposed.

**Clinical Laboratory** means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

**Contaminated** means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

**Contaminated Laundry** means laundry that has been soiled with blood or other potentially infectious materials or may contain sharps.

**Contaminated Sharps** means any contaminated object that can penetrate the skin including, but not limited to, needles, scalpels, scissors, broken glass, broken capillary tubes, and exposed ends of dental wires.

**Decontamination** means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal.

**Engineering Controls** means controls (e.g. sharps disposal containers, self-sheathing needles, safer medical devices, such as sharps with engineered sharps injury protections and needleless systems.) that isolate or remove the bloodborne pathogens hazard from the workplace.

**Exposure Incident** means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties. "Non-intact skin" includes skin with dermatitis, hangnails, cuts, abrasions, chafing, acne, etc.

**Hand washing Facilities** means a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

**Licensed Healthcare Professional** is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by the Hepatitis B Vaccination and post-exposure Evaluation and Follow-up section of this plan.

**HBV** means hepatitis B virus.

**HIV** means human immunodeficiency virus.

**Occupational Exposure** means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of any employee's duties.

**Other Potentially Infectious Materials (OPIM)** means the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, all body fluids in situations where it is difficult or impossible to differentiate between body fluids, Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV. Included are human cells, tissue cultures, and blood products and blood components containing known or suspected bloodborne pathogens, unless documented to be free of human bloodborne pathogens.

**Needleless Systems** means a device that does not use needles for:

(1) The collection of bodily fluids or withdrawal of body fluids after initial venous or arterial access is established;

(2) The administration of medication or fluids; or

(3) Any other procedure involving the potential for occupational exposure to bloodborne due to

percutaneous injuries from contaminated sharps.

**Parenteral** means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

**Personal Protective Equipment** is specialized clothing or equipment worn by an employee for protection against a hazard. General work clothes (e.g. uniforms, pants, shirts, or blouses) are not intended to function as protection against a hazard are not considered to be personal protective equipment.

**Production Facility** means a facility engaged in industrial-scale, large volume or high concentration production of HIV or HBV.

**Regulated Waste** means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi liquid state if compressed: items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

**Research Laboratory** means a laboratory producing or using research laboratory scale amounts of HIV or HBV. Research laboratories may produce high concentrations of HIV or HBV but not in the volume found in production facilities.

**Sharps with engineered sharps injury protectors** means a non-needle sharp or a needle device used for withdrawing body fluids, accessing a vein or artery, or administrating medications or fluids, with a built-in safety feature or mechanism that effectively reduces the risk of an exposure incident.

**Source Individual** means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee. Examples include, but are not limited to hospital and clinic patients; clients in institutions for the developmentally disabled; trauma victims; clients of drug and alcohol treatment facilities; residents of hospices and nursing homes; human remains; and individuals who donate or sell blood or blood components.

**Sterilize** means the use of physical or chemical procedures to destroy all microbial life including highly resistant bacterial endospores.

**Universal Precautions** is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV and other bloodborne pathogens.

**Work Practice Controls** means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g. prohibiting recapping of needles by a two-handed technique).